of large molecules and by the increase of the phosphorus content in the fine molecule fraction. The accumulating products can therefore be identified as nucleosidepolyphosphates (NPP) and their low polymers (Fig 4). The author finally tries to explain these phenomena. V. Yu. Kaminskiy, Ye. L. Pevzner, L. S. Tsarapkin, A. F. Shelimova, N. V. Timofeyev-Resovskiy and A. I. Golub assisted in the experiments and gave their advice. There are 4 figures, 2 tables, and 17 references, 12 of which are Soviet.

ASSOCIATION: Institut biologii Ural'skogo filiala Akademii nauk SSSR (Institute of Biology of the Ural Branch of the Academy of Sciences, USSR)

PRESENTED: February 10, 1959 by V. A. Engel'gardt, Academician

SUBMITTED: February 9, 1959

LUCHNIK, N.V.; PLISHKIN, Yu.M.; TALUTS, G.G.

Mechanisms of the self-duplication of elementary cell structures. Pt.2: Physical principles of the spiral form of certain macromolecules and the possible mechanism of DNA replication. TSitologiia 2 no.1:57-61 Ja-F '60. (MIRA 13:5)

1. Otdel biofiziki i radiobiologii Instituta biologii Ural'skogo filiala i Otdel teoreticheskoy fiziki Instituta fiziki metallov AN SSSR, Sverdlovsk.
(NUCLEIC ACIDS) (MOLECULES)

KOROGODIN, V.I.; LUCHNIK, N.V.

Problem of the nature of primary changes in radiation cell injury. Biofizika 5 no.1:88-90 '60. (MIRA 13:6)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo universiteta i laboratoriya biofiziki Ural'skogo filiala AN SSSR.

(RADIATION INJURY exper.)

21449
S/626/60/000/012/004/010
D298/D304

27.3000 also 2209, 1234 1565 1282

AUTHOR: Luchnik, N. V.

TITLE: Radiation afflictions and factors which affect them. IV. The action of various substances injected into mice on the effect of irradiation

PERIODICAL: Akademiya nauk SSSR. Ural'skiy filial. Institut biologii. Trudy. no. 12. Moscow, 1960. Sbornik rabot Laboratorii biofiziki. no. 2: Problemy biofiziki, 46-75

TEXT: The author set out to check the theory of mortality peaks in radiation sickness. The present study was an attempt to compare the effect of a large number of anti-radiation agents on the first and second mortality peaks in radiation sickness. Three main lines of research were pursued: 1)To check whether the mortality peaks reflected the various final causes of the irradiated animals' death; 2) to isolate from a large number of agents those which reduced the first mortality peak; 3) to determine whether analysis of the mortality peaks can serve as a basis for classifying anti-ra-

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Radiation afflictions and ...

diation agents. The agents tested were adrenalin, aconitate, alanine, thioglycolic anilide, ascorbic acid, acetone, acenaphthene, berberine, hexanal, hydrosulfite, histamine, glycocoll, glucose, dimedrol, gelatine, insulin, calcium chloride, campolon, cobalamine, caffeine, lysine, horse serum, morphine, niacine, sodium nitrite, paraphenylene, diamine, pyrodoxine, sodium pyruvate, riboflavin, serine, strychnine, tannin, thiamine, thiourea, sodium acetate, urethane, folliculin, follinic acid, fumarate, quinosol, potassium cyanide, cysteine, sodium citrate, ethanol, ethylenediamine, EDTA, ephedrine, sodium mallate, succinic acid. In part I of the work, devoted to determining the parameters of the first peak and the effect of the test animals' individual features on it, white rats and mice of the strains K4 (KCh), H (N), X (Kh) and M (M) were used. In the second part of the research the tests were conducted with male and femal mice of the N strain. The animals were irradiated with Co^{60} in a dose of 1,000 r at an intensity of 38 - 46 r/min. The test substances were injected in a single dose 10 days before irradiation, immediately before irradiation or immediately after

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it. Part III of the work describes the results of experiments conducted with a large number of animals at lesser doses or irradiation (in the order of $LD_{70/30}$). The results are considered separately for the three groups. It was found that such factors as the animal's strain, sex and age had little influence on the effect of irradiation in large doses. Among mice of the N strain irradiated with 1000 r 84.7% died at the first mortality peak (i.e., in the course of 5,5 days), 13.7% at the second peak and 1.6% at the third peak. The use of preliminary irradiation, diethyl stilbestrol, folliculin or embichine 10 days before the main irradiation led to a definite reduction in the first and second mortality peaks among the irradiated mice. The injection of acenaphthene glucose, lysine, horse serum, strychnine, sodium acetate or cysteine immediately before irradiation reduced the first peak. The introduction of alanine, thioglycolic anilide, hydrosulfite, hyposulfite, glycocoll, caffeine, serine, thiourea or sodium citrate immediately before irradiation reduced the second peak. The injection of berberine, sodium pyruvate, EDTA, sodium mallate or succinic acid immediately before irradiation reduced both peaks. The injection of sodium py-

Radiation afflictions and ...

ruvate immediately after irradiation reduced the first peak. The injection of acenaphthene or liver extract immediately after irradiation reduced the second peak. The injection of berberine or novocaine immediately after irradiation reduced both peaks. Tests with estrogens, cysteine, yeast extract, thiourea and atropine on animals exposed to lesser doses of radiation gave results similar to those obtained in the main tests. The various anti-radiation agents act selectively on the various peaks. This fact indicates that the mortality peaks are a reflection of the various final causes of death in the irradiated animals. The first peak is only partly susceptible to the action of pharmacological agents. The indications are that the first peak can be reduced by a general increase in the animals' resistance, achieved by using methods similar to immunization or by affecting the Kreb's urea cycle. The author discusses the significance of the results and proposes a means of classifying anti-radiation agents into 3 main groups according to their action on the mortality peaks. The classification takes into account the optimum time of application, the effect on the mortality peaks and certain other factors. Type I consists of

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Radiation afflictions and ...

prophylactic agents effective when introduced into the body a few days before irradiation. Type II consists of protective agents effective only when introduced into the body immediately before irradiation. Type III consists of therapeutic agents effective when used after irradiation. The author recommends his classification as a basis for further work on the systematization of existing anti-radiation agents and in the search for new agents. There are 5 figures, 16 tables and 24 references: 9 Soviet-bloc and 15 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: V. P. Bond, H. S. Silverman a. E. P. Cronkite, Pathogenesis and pathology of post-irradiation infection. Rad. Res., 1954, vol. 1, p. 389; H. R. Mahler, Butyryl coenzyme A-dehydrogenase, a cuproflavoprotein. J. Am. Chem. Soc., 1953, vol. 75, p. 3288; H. M. Patt, Protective mechanisms in ionizing radiation injury. Physiol. Rev., 1953, vol. 33, p. 35; B. Rajewsky, Radiation death in mammals. Radiobiol. Symp. Liège. London, Butterworth Co., 1955, p. 81.

Card 5/5

4

31450
S/626/60/000/012/005/010
D298/D303

27.300 also 2209, 1565, 1234 1282

AUTHOR: Luchnik, N. V., and Timofeyeva-Resovskaya, Ye. A.

TITLE: Radiation afflictions and factors which affect them. V. The action of cysteine and certain other sulfurous substances on the effect of irradiating animals and plants

PERIODICAL: Akademiya nauk SSSR. Ural'skiy filial. Institut biologii. Trudy. no. 12. Moscow, 1960. Sbornik rabot Laboratorii biofiziki. No. 2: Problemy biofiziki, 76-92

TEXT: Together with L. S. Tsarapkin the authors conducted experiments to determine the protective action of cysteine on irradiated rats, mice and pea varieties. Irradiation was carried out from an x-ray (rats) or gamma-ray Co^{60} (mice, pea) source. The irradiation intensity was 15 r/min for the rats and 10 or 50 r/min for the mice. Cysteine was injected intravenously, subcutaneously or intraabdominally at a pH of about 7. Before irradiation the pea seeds or sprouts were soaked for 1 - 6 hours in a 0.001, 0.01 or 0.1 mol/l

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concentration of cysteine. The radiation and cysteine doses were 450, 500, 550, 600 and 650 r and 100 or 900 mg/kg for the rats. The mice were irradiated in doses of 500 - 800 r and received 5, 10, 15, 20 or 25 mg of cysteine. The pea seeds and sprouts were irradiated in doses of 400 - 700 r. Other sulfurous agents, in addition to cysteine, were tested: Thiourea, hydrosulfite, hyposulfite, methylthiouracyl and thioglycolic anilide. The injection of cysteine before irradiation in moderate doses increased the number of rats which survived; at higher doses of radiation it increased the animal's average life span. The injection of cysteine after irradiation gave no effect. In rats the injection of cysteine had no effect on the initial drop in weight and number of formed elements in the peripheral blood but did accelerate the return of these indices to normal. The effect of cysteine on mice varied from strain to strain and also from male to female within the same strain. The protective effect of cysteine increased with a rise in the amount injected up to subtoxic doses. The other sulfurous substances tested in experiments on mice proved to have much less pronounced protective ability than cysteine. Cysteine had no vi-

sible effect on non-irradiated pea strains. When administered before irradiation, however, it reduced the inhibition of growth and the number of abnormal mitoses, both of which effects were correlated with each other. The protective action of cysteine on pea varieties was approximately proportional to the logarithm of its concentration. The maximum protective effect was achieved by soaking the seeds or shoots in a cysteine solution for a period of 2 hours. For the cysteine to have a protective effect it must be present in the tissues at the time of irradiation. Some findings indicated that cysteine predominantly effects, not the number of primary breaks, but their future fate. The fact that cysteine must be in the tissues at the time of irradiation to have any protective effect indicates that cysteine acts by reducing the output of the products of water radiolysis. Other findings rather discount the oversimplified concept that cysteine merely decreases the "effective dose". Cysteine probably acts differently on the various effects of irradiation, probably through interacting with the physiological processes. There are 10 figures, 12 tables and 16 references: 5 Soviet-bloc and 11 non-Soviet-bloc. The 4 most recent refe-

Radiation afflictions and ...

rences to the English-language publications read as follows: W. T. Burnett, G. E. Stapleton a. A. Hollaender, Protective action of some sulfur-containing and sulfur-free compounds against X-ray damage in bacteria. Fed. Proc., 1951, vol. 10, p. 22; L. O. Jacobson, A humoral factor concerned in recovery from irradiation injury. Canc. Res., 1952, vol. 12, p. 315; G. Limperos, Alteration of the mortality of roentgen-irradiated mice by chemical means. Am. J. Roentgenol., 1952, vol. 67, p.810; R. H. Mole, Protection from whole body-irradiation by chemical means. J. Chim. Phys., 1951, vol. 48, p. 258.

Card 4/4

31451
S/626/60/000/012/006/010
D298/D303

27 3000 2209, 1564, 1234,

AUTHOR: Luchnik, N. V.

TITLE: Radiation afflictions and factors which affect them. VI. The effects of yeast extracts on the mortality of irradiated mice and pea sprouts

PERIODICAL: Akademiya nauk SSSR. Ural'skiy filial. Institut biofiziki. Trudy. no. 12. Moscow, 1960. Sbornik rabot Laboratorii biofiziki. no. 2: Problemy biofiziki, 93-118

TEXT: In previous research the author found that the general action of radiation was normally closely correlated with cytological lesions. Attempting to explain these cytological effects, he concluded that one of the basic processes finally leading to cytological abnormalities is change in the nucleoprotein metabolism. Since nucleic acid is an important constituent of yeast extracts, the author conducted experiments to test the effect of yeast extracts on the mortality of irradiated mice and pea sprouts. The

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Radiation afflictions and ...

mice were of the M (M), X (Kh), K (K) and H (N) strains. Seeds of the Kapital variety pea were used in the tests. Irradiation was carried out by gamma-rays from a Co^{60} source at an intensity of 10 and 15 r/min. The yeast extracts were injected intraabdominally into the mice 30 min after the end of irradiation. In some cases the injections were repeated. The irradiated pea plants were placed in yeast extract solutions of various concentrations and grew in them until the end of the experiment. The author was assisted in his experiments by L. S. Tsarapkin and Ye. L. Pevzner. It was found that post-radiation administration of yeast extracts reduced the death rate of the mice, inhibition of the pea's growth and the number of abnormal mitoses in its cells. The extracts proved to be non-toxic and possessed anti-radiation properties in a wide range of doses. The range was especially wide as regards the cytological effects. Extraction of dry substance from the extracts gave a powder which, when redissolved, had all the properties of the fresh extract. If the yeast cells were kept under conditions unfavorable to their life-activity (e.g. low temperature, dessication, irradia-

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Radiation afflictions and ...

tion) before extracts are prepared from them, they develop anti-radiation properties. The tests proved that the anti-radiation properties of the yeast extracts were due to the presence in them of ribonucleic acid. The author announces the impending publication of a report on tests with ribonucleic acid which should give additional information on the mechanism of the yeast extracts' anti-radiation action. The author points out that the effectiveness of the yeast extracts when administered after irradiation and the fact th that their action is based on the nucleoprotein fraction indicate a similarity between yeast extracts and spleen preparations. This tends to support the humoral theory of the action of spleen and marrow preparations as opposed to the cellular theory. There are 10 figures, 21 tables and 19 references: 11 Soviet-bloc and 8 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: L. O. Jacobson, A humoral factor concerned in recovery from irradiation injury. Canc. Res., 1952, vol. 12, p. 315; E. Lorenz, C. Congdon, D. Uphoff, Modification of acute irradiation injury in mice and guinea-pigs by bone marrow injections. "Radiology", 1952, vol. 58, p. 863; C. P. Miller, C. W.

Card 3/4

31451
S/626/60/000/012/006/010
D298/D303

Radiation afflictions and ...

Hammond, M. Tompkins, Reduction of mortality from X-radiation by treatment with antibiotics. "Science", 1960, vol. III, p. 719; H. M. Patt, Protective mechanisms in ionizing radiation injury. Physiol. Rev., 1953, vol. 33, p. 35.

Card 4/4

LUCHNIK, N.V.

Radio stimulation of plants. Report No.5: Cytological analysis of radio stimulation phenomena. Trudy Inst. biol. UFAN SSSR no.12:139-158 '60. (MIRA 14:1)
(Plants, Effect of alpha rays on)
(Plants, Effect of beta rays on)

PORYADKOVA, N.A.; TIMOFEYEV-RESOVSKIY, N.V.; LUCHNIK, N.V.

Radio stimulation of plants. Report No.6: Experiments with X and gamma irradiation of pea and wheat seeds at different stages of soaking and germination. Trudy Inst. biol. UFAN SSSR no.12:159-188 '60. (MIRA 14:1)

(Plants, Effect of X rays on)
(Plants, Effect of gamma rays on)

TIMOFEYEV-RESOVSKIY, N.V.; LUCHNIK, N.V.

Cytological and biophysical aspects of radio stimulation of plants. Trudy Inst. biol. UFAN SSSR no. 13:5-17 '60. (MIRA 14:1)
(Plants, Effect of radiation on)

32386
S/626/60/000/013/002/003
B144/B147

27.24100

AUTHOR: Luchnik, N. V.

TITLE: Approaches to classify radiation blockers

SOURCE: Akademiya nauk SSSR. Ural'skiy filial. Institut biologii. Trudy. no. 13. Sverdlovsk, 1960. Sbornik rabot Laboratorii biofiziki. no. 3., 57-71

TEXT: A summary of previous approaches to classify radiation blockers is given. Further progress is expected from the analysis of mortality peaks (MP) in irradiated animals. Satisfying results are obtained by estimating the probable death rate in a definite time interval. The number of animals perishing in t is divided by the number of animals living at the beginning of a given interval. The mortality curves show five MP the heights of which decrease proportionally to the number of survivals. Extensive testing of mice of both sexes and different stocks proves that these MP are subject to general rules and fairly consistent with results obtained previously with x-rayed animals. The effect of gamma-ray doses of 450-1000 r on MP height and position was studied. An important

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Approaches to classify radiation ...

result is that the chronological occurrence of MP is dose-independent in first approximation. Within the individual peaks, LD_{50} is 800-900 r. 10 prophylactic, 50 protective, and 20 therapeutic substances applied 10 days before irradiation, immediately before, and directly after irradiation, respectively, were studied as to their effect on the first peaks in white mice irradiated with 1000 r (Co^{60}). 32 substances had a marked effect either selectively on the first or second, or on both MP. The remaining were useless, although they had previously proved to be effective at lower r doses. Test results so far support the initial assumption that the individual MP should be regarded as indicators of different final death causes or groups of causes. This should be finally proved by further biochemical and pathophysiological experiments. There are 7 figures, 3 tables, and 25 references: 15 Soviet and 10 non-Soviet. The four most recent references to English-language publications read as follows: Bacq Z. M., Alexander P. Fundamentals of radiobiology, London 1955; Rajewsky B. Radiation death in mammals, Radiobiol. Symp. Liège, London, 1955, 81; Schlumberger H. G., Vazquez J. J. Pathology of total body irradiation in the monkey. Am. J. Pathol., 1954, 30, 1013; Tullis, J. R., Chambers F. W., Morgan J. E., Zeller J. H. Mortality in swine and

32386
S/626/60/000/013/002/003
B144/B147

Approaches to classify radiation ...

dose distribution studies in phantoms exposed to supervoltage roentgen radiation. Am. J. Roentgenol., 1952, 67, 620.

Card 3/3

LUCHNIK, N. V. Cand Biol Sci -- "Quantitative laws of the lethal effect of ionizing radiations upon mammals." Sverdlovsk, 1961 (Acad Sci USSR. Ural Affiliate. Inst of Biol). (KL, 4-61, 192)

LUCHNIK, N. V. (Sverdlovsk)

"One of the Possible Applications of the Theory of Probability in Radiation Cytology."

report presented at the 3rd Conference on the use of Mathematics in Biology, Leningrad University, 23-28 Jan 1961.

(Primeneniye matematicheskikh metodov v biologii. II, Leningrad, 1963, pp. 5-11

(Moscow Agricultural Academy imeni Timiryazev).

LUSHNIK, N.V.

Sequence of nucleotides in ribonucleic acid triplets determining the incorporation of amino acids into proteins. Biokhimiia 27 no.6:1032-1046 N-D '62. (MIRA 17:5)

1. Laboratoriya biofiziki Instituta biologii Ural'skogo filiala AN SSSR, Sverdlovsk.

TIMOFEYEVA-RESOVSKAYA, Yelena Aleksandrovna; LUCHNIK, N.V., kand. biolog. nauk, otv. red.; FAVORSKAYA, A.P., red. izd-va; PAL'MIN, M.Z., tekhn. red.

[Distribution of radioisotopes among the basic components of bodies of fresh water.] Raspredelenie radioizotopov po osnovnym komponentam presnovodnykh vodoemov. Sverdlovsk, 1963. 76 p. (Akademiia nauk SSSR. Ural'skii filial. Institut biologii. Trudy, no.30) (MIRA 17:1)

LUCHNIK, N.V.

Interaction between ionizing radiations and living substances and the nature of reactions of the latent period. Trudy MOIP. Otd. biol. 7:174-180 '63. (MIRA 16:11)

LUCHNIK, N.V.; SHVARTS, S.S., doktor biol. nauk, prof., otv. red.

[Statistical analysis of the problem of the amino acid code.] Statisticheskii analiz problemy aminokislotnogo koda. Sverdlovsk, 1963. 169p. (Akademiia nauk SSSR. Ural'skii filial. Institut biologii. Trudy, no.37).

(MIRA 17:9)

ACCESSION NR: AT3012178 S/2969/63/000/002/0177/0182

AUTHOR: Luchnik, N. V.

TITLE: A possible application of the theory of probability to radiation cytogenetics

SOURCE: Leningrad. Universitet. Primeneniye matematicheskikh metodov v biologii, no. 2, 1963, 177-182

TOPIC TAGS: ionizing radiation, cytological change, chromosome, chromosome fragmentation, primary radiation injury, independent injury regeneration, entire cell regeneration, Poisson probability distribution, primary injury probability distribution, regeneration probability distribution

ABSTRACT: Many cytological changes caused by ionizing radiation, especially chromosome fragmentation, first appear not in an irreversible form as was once believed, but are the result of potential injuries which can be regenerated or realized into irreversible changes with definite probability. The author agrees that primary injuries are the direct result of ionizing particles

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ACCESSION NR: AT3012178

passing through the chromosome and represent changes that are local and independent of one another, but he does not support the position that regeneration of these primary injuries takes place independently. On the basis of earlier experiments, he suggests that regeneration may take place according to an "all or nothing" principle, that is, regeneration of the entire cell and not of the separate potential injury. For an analysis of independent regeneration of primary injuries, the author applies Poisson's probability distribution. For an analysis of cell regeneration he develops a confluent Poisson distribution with R representing the average number of realized injuries per cell:

$$R = \frac{\overline{\chi}}{1 - e^{-\overline{\chi}}} \qquad (5)$$

Then both probability distributions are applied to an experiment, which demonstrates that cell regeneration of primary radiation injuries actually does take place and confirms the hypothesis of potential injuries. The results do not mention the absence or presence of local regeneration which may or may not coexist with cell regeneration. With this probability distribution method, it is possible to predict the number of primary injuries and the extent of

ACCESSION NR: AT3012178

regeneration. The author thanks "A. A. Lyapunov and N. V. Timofeyev-Resovskiy for valuable suggestions." Orig. art. has: 2 tables and 6 formulas.

ASSOCIATION: Leningradskiy universitet (Leningrad University)

SUBMITTED: 00	DATE ACQ: 15Aug63	ENCL: 00
SUB CODE: AM	NO REF SOV: 005	OTHER: 009

Card 3/3

ACCESSION NR: AT3012179 S/2969/63/000/002/0212/0224

AUTHOR: Luchnik, N. V.; Livchak, Ya. B.

TITLE: Interpretation of time-effect curves

SOURCE: Leningrad. Universitet. Primeneniye matematicheskikh metodov v biologii, no. 2, 1963, 212-224

TOPIC TAGS: time-effect curve analysis, old time-effect curve hypothesis, new time-effect curve hypothesis, radiation cytogenetic change, chromosome mutation, time-effect curve formula, function of damage, different shaped time-effect curves

ABSTRACT: The authors advance the hypothesis that in experimental biology the time-effect curve can represent not only a statistical characteristic of a given population, but can represent a characteristic of the process leading to the studied reaction. Thus, time itself becomes the investigated subject instead of being a conditional characteristic of the subject's statistical properties. It is demonstrated by actual cases that the shape of a time-effect curve may be determined in the first place not by biological changeability,

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ACCESSION NR: AT3012179

but by the kinetics of the damage and regeneration processes. Formulas are given for obtaining different types of time-effect curves from the damage function p(t) and for inverse operations and these can be used in processing experimental data. "The authors are grateful to A. A. Lyapunov, N. V. Timofeyev-Resovskiy, M. A. Mikulinskiy, V. Ye. Tret'yakov, and G. N. Mil'shteyn for interest shown in this work and for valuable advice." Orig. art. has: 7 figures, 6 formulas.

ASSOCIATION: Leningrad Universitet (Leningrad University)

SUBMITTED: 00 DATE ACQ: 15Aug63 ENCL: 02

SUB CODE: AM NO REF SOV: 013 OTHER: 008

Card 2/42

EWT(1)/EWT(m) P-4/Pe-4 ...

...ION NR: AT4044484 S/0000/64/000/000/0005/0014

... Luchnik, N. V.; Poryadkova, N. A.; Tsarapkin, L. S.; Timo-...kovskiy, N. V.

... The mechanism of recovery from radiation injuries on the cellular level

... Vosstanovitel'nyye protsessy pri radiatsionnykh porazhe-... Recovery from radiation ... [illegible] ...

... FACS: ionizing radiation, radiation protection, genetics, ...metry, cytology

... ABSTRACT: The authors studied chromosomal mutations associated with ... ...iation of pea seeds and ... Multifocal studies were ... ...ere three categories: 1) primary cytogenetic radiation ... ... influence of ... on ... in chromosomal ... 2) dependence of ... and mutation on ... ... In the first test, it was ... [illegible]

ACCESSION NR: AT4044484

but rather due to recovery from cytogenetic injuries in dry seeds exposed to 10,000 r to 15,000 r and in pea sprouts irradiated with 500 r. It had been previously shown that the mutagenic effects of irradiation could be diminished through the use of RNA and ATP. In [illegible] and tests it was shown that cysteine was also effective in [illegible] the number of chromosomal fragments and bridges appearing as a result of recombination following irradiation. It follows that a reduction in the number of chromosomal mutations is associated [illegible] recovery from primary cytogenetic injury. In studying the protective effectiveness of a variety of substances in reducing chromosome mutation following the irradiation of seeds, it was found that [illegible] trichlorophenol and ATP were the most effective in reducing mutations [illegible]

ACCESSION NR: AT4044484

four distinct types of chromosomal injury followed by doubling and ... replication. From a figure given in the article, it is apparent ... the character of chromosomal recovery depends upon the type of ... replication and the distribution of chromatids with respect to chromosomes. The authors conclude that not all chromosomal injuries ... to radiation are damaging to the cell and that a biochemical ... of the nature of these injuries will lead to methods which ... lower organismal radiation injuries. Orig. art. ...

... NONE

L 14158-66 EWA(h)/EWP(j)/EWT(m)/EWA)1) RM/JK
ACC NR: AP6001310 SOURCE CODE: UR/0248/65/000/009/0014/0018

AUTHOR: Luchnik, N. V.

ORG: Institute of Medical Radiology, AMN SSSR, Obninsk (Institut meditsinskoy radiologii AMN SSSR)

TITLE: Biophysical analysis of the primary biological effects of radiation

SOURCE: AMN SSSR. Vestnik, no. 9, 1965, 14-18

TOPIC TAGS: radiation biologic effect, radiation protection, radiation sensitivity, carcinoma, radiology

ABSTRACT: The author reviews the literature on the mechanism of the radiation biological effect on the cytogenetic, macromolecular, and primary reaction levels, and describes the primary processes underlying radiobiological effects. Absorption of radiation energy by the living cell gives rise to several primary reactions, none of which is decisive; both the direct and indirect effects are significant. Potential injuries to the genetic structures seem to be due to changes in the nucleoproteins, specifically isolated ruptures of DNA; energy metabolism, impaired by ra-

UDC: 612.014.482 : [612.014.1+576.3]

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L 14158-66
ACC NR: AP6001310

diation, also plays an important role in the biochemical changes. The author briefly discusses some aspects of radiosensitivity, chemical protection (the concept of potential injuries justifies the search for drugs that may be effective in preventing cytogenetic damage even after irradiation), and carcinogenesis. The similarity of carcinogenesis to mutagenesis suggests the desirability of investigating agents capable of increasing or decreasing the number of chromosome abberations.

SUB CODE: 06/ SUBM DATE: 05Jun65/ ORIG REF: 016/ OTH REF: 003

Card 2/2

LUCHNIK, Z. I.

37425. Dekorativnyye rasteniya flory gornogo altaya. V sb: Zelenoye stroit-vo. L., 1949, s. 71-79.

SO: Letopis' Zhurnal'nykh Statey, Vol. 7, 1949

LUCHNIK, Z. I.

Agriculture

Altai mountain area ornamental plants. Moskva, Gos. izd-vo selkhoz lit-ry, 1951.

Monthly List of Russian Accessions, Library of Congress, June 1952. Unclassified.

1. LUCHNIK Z. I.

2. USSR (600)

4. Oak - Altai Territory

7. Winterhardiness of summerEnglish oak in the Altai. Les. Khoz. 5 No. 11. 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

LUCHNIK, Z.I.

Use of wild perennials in landscape gardening. Trudy Bot.inst. Ser.6 no.7:475-477 '59. (MIRA 13:4)

1. Altayskaya plodovo-yagodnaya opytnaya stantsiya, Barnaul.
(Perennials)

LUCHNIK, Z.I.

[Pruning of shrubs] Obrezka kustarnikov. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1960. 94 p. (MIRA 15:2)
(Shrubs)

LUCHNIK, Z.I.

Introduction of ornamental trees and shrubs in the Altai. Trudy TSSBS no.3:77-84 '60. (MIRA 15:3)
(Altai Mountains--Plants, Ornamental)

KRASIL'NIKOV, P. A.; DYKHOVICHNAYA, N. A.; LUCHNIKOV, I. A.; SHCHUKIN, S. I.
LUCHNIKOV, I. A.

"The foundation of the highest part of the Dorogomilov Hotel in Moscow," Construction, 1952.

LUCHNIKOV, N.A., inzhener

Repairing the connecting rod in a saw frame by pressure gas welding. Svar. proizv. no.2:23-24 F '55. (MIRA 8:9)
(Oxyacetylene welding and cutting)

LUCHNIKOV, V. (TSelinnyy kray); KONYUKHOV, V. (TSelinnyy kray)

More consideration should be given to village workers. Obshchestv. pit. no. 3:6 Mr '61. (MIRA 14:4)

1. Nachal'nik otdela obshchestvennogo pitaniya Severo-Kazakhstanskogo oblpotrebsoyuza (for Luchnikov).
(North Kazakhstan Province—Restaurants, Lunchrooms, Etc.)

YAKOVENKO, V.G.; LUCHNIKOV, Yu.S., inzh.

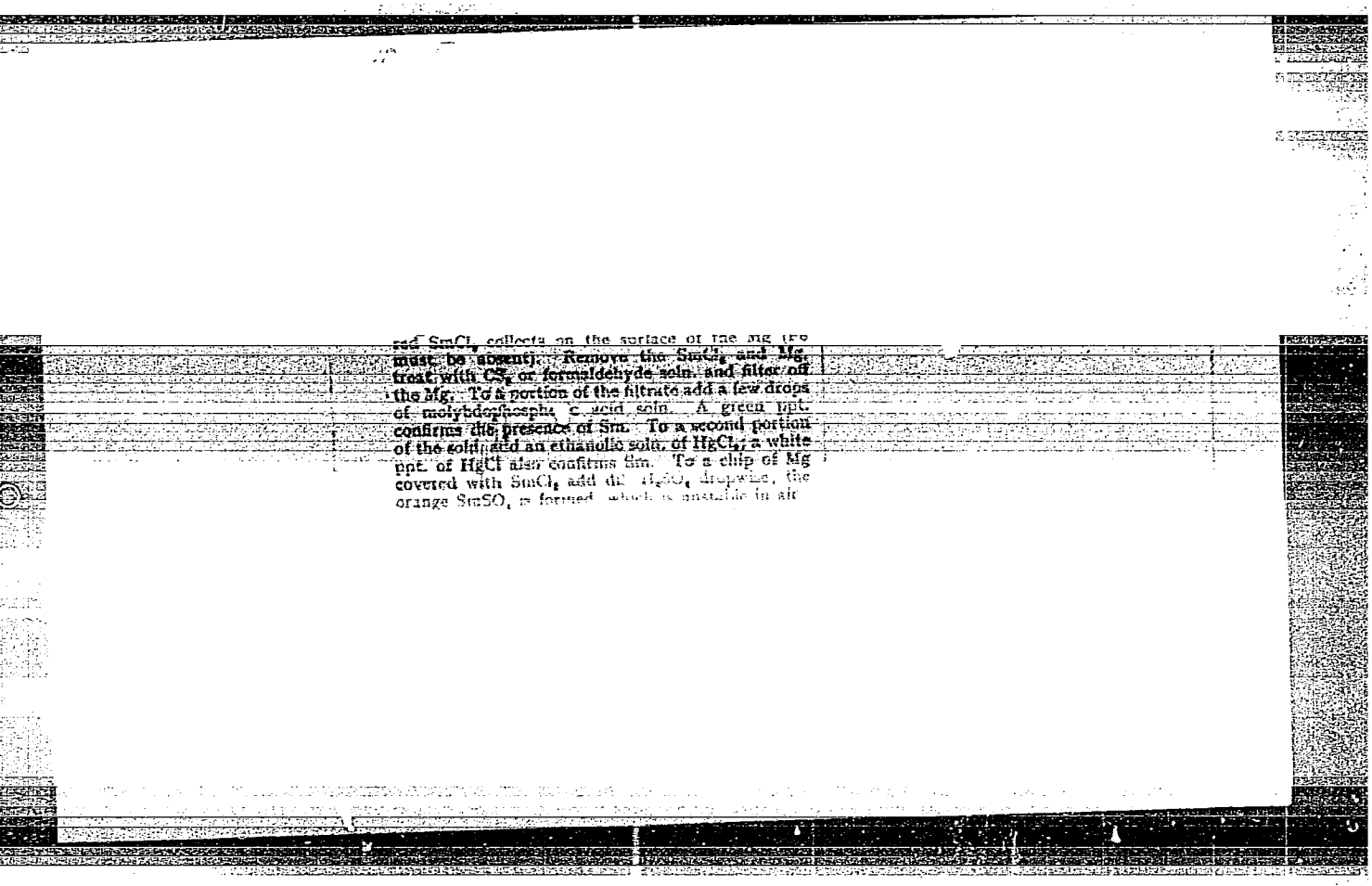
Device for inspecting the sinking of reinforced concrete shells. Transp. stroi. 12 no.5:30 My '62. (MIRA 15:6)

1. Glavnyy inzhener Novorossiyskogo morskogo stroitel'stva (for Yakovenko).

(Novorossisk--Wharves)
(Prestressed concrete construction--Testing)

LUCHNIKOV, Yu.S., inzh.

Effect of the extent of the breakdown on the bearing capacity of column shells. Transp. stroi. 15 no.6:48-49 Je '65.
(MIRA 18:12)



red $SmCl_3$ collects on the surface of the Mg (Fe must be absent). Remove the $SmCl_3$ and Mg treat with CS_2 or formaldehyde soln. and filter off the Mg. To a portion of the filtrate add a few drops of molybdophosphoric acid soln. A green ppt. confirms the presence of Sm. To a second portion of the soln. add an ethanolic soln. of $HgCl_2$; a white ppt. of HgCl also confirms Sm. To a chip of Mg covered with $SmCl_3$ add dil. H_2SO_4 dropwise, the orange $SmSO_4$ is formed which is unstable in air

LUCHNIKOVA, Ye.F.

5(2) PHASE I BOOK EXPLOITATION SOV/1727

Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii

Redkozemel'nyye elementy; polucheniye, analiz, primeneniye (Rare Earth Elements; Extraction, Analysis and Application) Moscow, Izd-vo AN SSSR, 1958. 331 p. 2,200 copies printed.

Resp. Ed.: D. I. Ryabchikov, Professor; Editorial Board: I. P. Alimarin, Corresponding Member, USSR Academy of Sciences, I. N. Zaozerskiy, Doctor of Chemical Sciences, R. V. Koglyarov, Candidate of Technical Sciences, V. I. Kuznetsov, Doctor of Chemical Sciences, M. M. Senyavin, Candidate of Chemical Sciences, and Yu. S. Sklyarenko, Candidate of Chemical Sciences; Eds. of Publishing House: D. N. Trifonov and T. G. Levi; Tech. Ed.: S. G. Markovich.

PURPOSE: This book is intended for scientists, chemists, teachers and students of higher educational institutions, chemical and industrial engineers, and other persons concerned with the extraction, preparation, use, or study of rare earth elements.

COVERAGE: This collection contains reports presented at the June 1956 Conference on Rare Earth Elements at the Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the Academy of Sciences USSR. The articles treat chemical methods of separating rare earth mixtures, methods of processing rare earth ores, ion exchange chromatography, chemical analysis, and some industrial applications of rare earths. Aside from contributing authors, the editors mention the following Soviet scientists, who are studying rare earth elements, rare earth deposits, extraction methods, and the preparation of oxides and salts: Martynov, Mal'nikov, Khrushchev, Melikov, Pisarzhevskiy, Chernyak, Tanatar, Belousov, Zhukov and especially, N. A. Orlov, who first obtained the majority of rare earth elements in the pure state, separated many complex molecular compounds of these elements, and determined their specific properties. References are given at the end of each article.

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(7)

~~5(2)~~ 5.2300

S/078/60/005/02/020/045
B004/B016

AUTHORS: Ambrozhiy, M. N., Luchnikova, Ye. F., Sidorova, M. I.

TITLE: The Thermal Decomposition of Carbonates of Rare Earths[27] of the Cerium[27] Subgroup

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 2, pp 366-371 (USSR)

ABSTRACT: The authors investigated the thermal behavior of the carbonates of La, Ce, Pr, Nd, and Sm. The analyses of these substances are given in table 1. L. S. Shrayber took the thermograms (Figs 1-5) by means of the Kurnakov pyrometer. Table 2 presents the data of thermal dissociation of the carbonates, and table 3 the temperatures, at which the decomposition is completed. The decomposition proceeds according to the following scheme: a) Discharge of the crystal water, b) formation of intermediates, except for $Sm_2(CO_3)_3$, c) formation of the oxide.

As far as the thermal stability is concerned, the compounds investigated may be arranged in the following order:

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68229

The Thermal Decomposition of Carbonates of Rare Earths of the Cerium Subgroup

S/078/60/005/02/020/045
B004/B016

$Pr_2(CO_3)_3 < Ce_2(CO_3)_3 < Sm_2(CO_3)_3 < Nd_2(CO_3)_3 < La_2(CO_3)_3$.

There are 5 figures, 3 tables, and 11 references, 7 of which are Soviet.

ASSOCIATION: Saratovskiy gosudarstvennyy universitet im. N. G. Chernyshevskogo (Saratov State University imeni N. G. Chernyshevskiy)

SUBMITTED: September 26, 1958

Card 2/2

AMBROZHIY, M.N.; LUCHNIKOVA, Ye.F.

Thermographic study of the decomposition of citrates of rare earth elements of the ceria group. Zhur. neorg. khim. 7 no.8: 1874-1879 Ag '62. (MIRA 16:6)

(Rare earths) (Citrates)
(Thermal analysis)

AMBROZHIY, M.N.; LUCHNIKOVA, Ye.F.

Detection of lanthanum, cerium, praseodymium, and neodymium when present together. Uch.zap. SGU 75:11-12 '62.
(MIRA 17:3)

LUCHNIKOVA, Ye.I.

Critical evaluation of the methods for studying the effect of mineral waters on the secretory function of digestive glands. Vop. kur., fizioter. i lech. fiz. kul't. 26 no.6:486-490 N-D '61. (MIRA 15:1)

1. Iz kafedry normal'noy fiziologii (zav. - dotsent L.G.Makarov) Omskogo meditsinskogo instituta imeni M.I.Kalinina.
(MINERAL WATERS--PHYSIOLOGICAL EFFECT) (DIGESTIVE ORGANS)

BACHURIKHINA, L.S.; LUCHNIKOVA, Ye.M.

Role of protective reaction in the resistance to insecticides in Drosophila. Issl. po gen. no.1:169-174 '61. (MIRA 15:1)
(RESISTANCE TO INSECTICIDES)

LUCHNIKOVA, Ye.M.

Motor activity in insects as a factor of behavioral resistance to insecticides. Issl. po gen. no.2:37-47 '64. (MIRA 18:4)

LUCHNIKOVA, Ye.M.

Preservation of behavioral resistance to indiscriminatingly used synthetic insecticides. Vest. LGU 19 no.21:130-135 '64
(MIRA 18:1)

LUCHNIKOVA, Ye.M.

Preservation of DDT-resistance in Drosophila in the absence of the supporting selection. Vest. LGU 19 no.3:156-162 '64.
(MIRA 17:3)

LUGHOWIEC, Jozef

Evaluation of bulls and rams in Poland based on their progeny.
Postepy nauk roln 9 no.1:27-37 Ja-F '62.

S/112/59/000/015/032/068
A052/A002

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1959, No. 15, pp. 153-154, # 32055

AUTHOR: Luchovitskaya, E.S.

TITLE: Unit for Handling Logical Conditions in "ПП -2" (PP-2)

PERIODICAL: V sb.: Probl. kibernetiki, No. 1, Moscow, Gos. izd-vo fiz.-matem. lit., 1958, pp. 172-177

TEXT: The unit for handling logical conditions in the programming routine (PP-2) developed to suit the "Strela" machine is described. By the logical formula and logical conditions contained in the formula the unit takes care of the composition of commands for checking logical conditions and for control transfer. In the routine each check of a logical condition is followed by a control transfer command. Check-commands are arranged according to the logical formula. As a result of performing this system of commands the control is transferred to one of two operators, depending on the meaning of the corresponding logical function (0 or 1). The work of the unit begins with the input of information after which the latter is prepared for further work. In the following part of the

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S/112/59/000/015/032/068
A052/A002

Unit for Handling Logical Conditions in "ПП-2" (PP-2)

routine the first opening bracket from the right and the corresponding closing bracket are found. Thereafter, the writing of control transfer commands for the logical conditions contained in the brackets found, follows and again the first opening bracket from the right and the corresponding closing bracket are found and the routine is repeated from the start. All logical operators are handled similarly. As an example a logical formula $p(p_2 \vee \overline{p_3}) \cdot (\overline{p_4} \vee p_5) \cdot p_6 \vee p_7$ is considered. The described algorithm of handling logical conditions can be improved by cutting the number of checks of the logical formula.

E.A.G.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

LUCHOWIEC, Jozef

Shortened milk feeding period of Polish Mountain lambs. Postepy nauk roln 11 no.6:57-63 N-D '64.

1. Experimental Field Collective in Grodziec Slaski of the Polish Academy of Sciences.

ZUKOWSKI, Kazimierz; [illegible], Jozef

Remarks on breeding practices in crossing foreign breeds with Polish red cattle. Postepy nauk roln 11 no.5:105-111 S-O '64.

1. M. Czaja Experiment Station, Grodziec Sl., of the Zootechnic Institute.

LUCHOWSKI, Walerian, mgr

14th General Convention of the International Association of Social Security. Praca zabezp spol 4 no.3:27-37 Mr '62.

LUCHOWSKI, Walerian

Additional pensions in Norway. Praca zabezp spol 4 no. 4:30-31. Ap '62.

LUCHOWSKI, Walerian; TYROWICZ, Marian

Damage problems for accidents and injuries suffered during work and for professional diseases. Praca zabezp spol 4 no.7:31-38 Jl '62.

LUCHOWSKI, Walerian

Social Security in the Vietnam Democratic Republic. Praca zabezp spol 5[i.e.4] no.6:45-47 Jr '62.

LUCHOWSKI, Walerian, mgr.

The European Social Charter. Praca i zabezp spol 4 no. 5:36-43. My '62

KUPERMAN, F.M.; LUCHSHEV, A.A.; SHUL'GIN, A.M.

Some features of the development and growth of corn in the new corn regions. Report no.1. Izv. AN SSSR. Ser.biol. no.4:15-38 Jl-Ag '56. (MLRA 9:10)

1. Moskovskiy ordena Lenina i ordena Krasnogo znameni Gosudarstvennyy universitet imeni M.V.Lomonosova, Kafedry darvinizma klimatologii i zemledeliya.
(MOSCOW PROVINCE--CORN (MAIZE))

[redacted] Geofizika, Alma [redacted]

[redacted]chshev, A. A.

[redacted] storms in the [redacted]

[redacted]

TOPIC TAGS: dust storm, soil erosion, wind erosion

[redacted]: In the spring [redacted] the [redacted] of the European Terri-
[redacted]
[redacted]

sity in Stavropol'skiy Kray on the subject of this phenomenon. The great length and intensity of the dust storms in March and April 1960 are, in addition to the synoptic situation, the result of inadequate protection of the soil from wind erosion, [redacted] of poor development (by autumn) of plantings of winter wheat and barley, and

ACCESSION NR: AR5012912

[illegible] in winter, which lowered the moisture of the crops. Increased [illegible]

DAVIDOVICH, Petr Yakovlevich; ZINOVKINA, Miloslava Mikhaylovna; KRIKUN, Viktor Yakovlevich; LUCHSHEV, Anatoliy Mikhaylovich; PEREVERZEV, V.V., red.; RASTOVA, G.G., vedushchiy red.; MUKHINA, E.A., tekhn. red.

[Rotary trench excavators for ~~laying pipes~~; manual for excavator operators] Transheinye rotornye ekskavatory dlia truboprovodnogo stroitel'stva; v pomoshch' mashinistu ekskavatora. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1961. 223 p. (MIRA 14:10)

(Excavating machinery)

DAVIDOVICH, Petr Yakovlevich; KORENTSVIT, Yefim Savel'yevich; LUCHSHEV, Anatoliy Mikhaylovich; NOVIKOVA, M.M., ved. red.; YAKOVLEVA, Z.I., tekhn. red.

[Earthwork and preparatory operations in the construction of pipelines] Zemlianye i podgotovitel'nye raboty na stroitel'stve magistral'nykh truboprovodov. Moskva, Gostoptekhizdat, 1963. 148 p. (MIRA 16:11)
(Pipelines) (Earthwork)

LUCHSHEV, A.A.

Meteorological conditions of dust storms in Stavropol in the spring of 1960. Geog. i khoz. no.12:24-28 '63. (MIRA 16:12)

LUCHSHEV, A.T.; MESHCHERYAKOVA, V.V.

Operation of catalytic-cracking equipment under conditions of abrasive wear. Mash. i neft. obor. no.6:23-27 '63. (MIRA 17:8)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut neftyanogo mashinostroyeniya.

LUCHSHEV, A.T.

Methods for increasing the wear resistance of equipment in plants with moving catalysts. Mash. i neft'. obor. no.1:33-36 '63. (MIRA 17:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut neftyanogo mashinostroyeniya.

LUCHSHEVA, A. A.

Meteorological Abst.
V. 4 No. 10
Oct. 1953 Part I
Aqueous Vapor and
Hyd...

4.10-216 551.579(02)

*Luchsheva, A. A., **Prakticheskaia gidrologiia.** [Practical hydrology.] Leningrad, Gidrometizdat., 1950. 290 p. 70 figs., 125 tables, 46 refs., 164 eqs., appends. DLC—This book contains a wealth of information on results of hydrological and hydrometeorological research work carried out during recent years by Russian scientists. A large number of formulas and methods are listed and described for the student and the practicing hydrologist, but no attempt was made to give a critical account or to show the limits of applicability. In particular the following fields are covered: hydrographic characteristics of rivers and their catchment areas, regime of water levels and discharges, ice phenomena, hydrometric problems, climatic characteristics of catchment areas (computation of mean precipitation, water reserves of snow, saturation deficit, evaperation from water surfaces, evapotranspiration, etc.), runoff norms, runoff variability, seasonal variation of runoff, flood and minimum discharges, river level and limnology. Numerous nomograms are given, as well as fragmentary hydrologic data and maps, mainly for the European part of the Soviet Union, showing the distribution of hydrologic parameters, data of freezing and breaking up of rivers, spring floods, maximum rainfall, annual and seasonal runoff and its variability. A special appendix includes data in the form of characteristic parameters for the geographic distribution of intense rainfall. *Subject Headings:* 1. Hydrology 2. Hydrologic maps 3. Textbooks 4. U.S.S.R.—A.A.L.

LUCHSHEVA, A.A.

Science--

Practical hydrometry. Leningrad, Gidrometeoizdat, 1951.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFED.

LUCHSHEVA, A.A.; LEBEDEV, V.V., kandidat tekhnicheskikh nauk, redaktor; TASHOGUKHODSKAYA, M.M., redaktor; SOLOVEYCHIK, A.A., tekhnicheskiy redaktor

[Practical hydrometry; exercises in hydrometric observations] Prakticheskaia gidrometriia. Uprazhneniia po obrabotke gidrometricheskikh nabliudenii. Izd. 2-e. Pod red. V.V.Lebedeva. Leningrad, Gidrometeorologicheskoe izd-vo, 1954. 335 p. (MLRA 7:10)
(Stream measurements)

LUCHSHEVA, A. A.

LUCHSHEVA, A. A.: "The hydrology of the Meshchera lowland." Moscow State U imeni M. V. Lomonosov. Geography Faculty. Moscow, 1956. (Dissertation for the Degree of Candidate in Geographical Science)

Source: Knizhnaya Letopis' No. 28 1956 Moscow

LUCHSHEVA, A. A.

AUTHOR: Luchsheva, A. A.

TITLE: Problems of Runoff in the Meshcherskaya Lowlands (Voprosy stoka Meshcherskaya nizmennosti)

PERIODICAL: Meteorologiya i Gidrologiya, 1957, No. 2, pp. 35-38 (U.S.S.R.)

ABSTRACT: Article on inland hydrology of the U.S.S.R. (Meshcher territory) represents a first attempt to explain the water balance and runoff regime (drainage system) of Meshcher River. (The Meshcherskaya Nizmennost' is a vast flat plain with an area of c. 25,000 sq/km. situated SW of Moscow and drained by the Klyazma, Moscow and Oka Rivers. Several lake systems are also found within the central sector of this lowland, which is a separate physico-geographic region whose uniqueness is conditioned by tectonic folding of carboniferous rocks and subsequent activity of glacial waters which filled the ancient alluvial plain with its deposits. The basic physical features, four in number, are listed as being of influence on the formation, distribution, and system of drainage; in brief they are: 1. swampiness is intensified by the slight

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slopes, the presence of many enclosed depressed relief forms delaying surface drainage evoking the raising and blockage of ground waters; 2. presence of thick clay layers (Jurassic, Cretaceous) obstructs downward flow and creates more supplies of ground waters in the stratum of quaternary deposits; 3. the great number of small lakes and vast swampy areas occupies from 40 to 70% of the area in the central regions causing a regulation of the runoff and increased moisture losses to evaporation; 4. the considerable forest cover, attaining up to 70% in places, causes features in the deposit and thawing of the snow cover, promoting a considerable regulation of the vernal runoff.

A chart of isohyets for the period 1881-1953 was compiled by us from the data of 56 meteorological stations located within the territory of Meshcher and in adjacent regions. Mean annual sums of precipitation within Meshcher vary from 600 mm. in the NW to 460 mm. in the SE; about 30% of the precipitation occurs in the winter. Variation in annual precipitation is characterized by a coefficient of variation, c_v, ranging from 0.17 to 0.29. A 9.2% decrease in annual precipitation sums for the last 20 years in comparison with the last 70 years has been established.

Problems of Runoff in the Meshcherskaya Lowlands

A chart of mean annual isotherms was compiled from data of 35 meteorological stations; the mean annual air t° varies from 3.4° in the north of Meshcher to 4.1° in the south in the Shilovo region. A steady rise in air t° is in evidence for recent decades accompanied by a runoff decrease both in the Meshcher rivers and in the contiguous basins, e. g. of the Moscow and Oka Rivers.

The most difficult component of water balance to determine was evaporation. In this, methods of B. V. Polyakov (11), N. A. Bagrov (2), M. I. Budyko (3, 4), and P. S. Kuzina (9) were used for calculating the summary evaporation for Meshcher conditions, while for 22 basins where actual runoff data were available, the water balance method was applied.

A chart of mean annual total evaporation for the Meshcher territory was compiled wherein it is apparent that total evaporation varies from 340 to 440 mm., the maximum falling in the central, swampiest region. The influence upon runoff of heightened evaporation from surfaces of lakes and swamps in the central region is manifested in a decline of the value of the mean annual modulus of runoff in

Card 3/6

comparison with adjacent regions by up to 3.0 liters per sec. per sq/km or in conversion to runoff layer, by 30-45 mm. The chart of distribution of mean annual runoff may be used for hydrological computations, especially in planning the drainage of Meshcher.

The possible influence of reclamation work upon runoff in the Meshcher lowland can be summarized in rough outline under the following points:

1. A change in values of mean annual river runoff will be slight with a certain tendency toward an increased runoff owing to decrease in losses to evaporation.
2. Intra-year runoff distribution will alter in the direction of a more uniform pattern with respect to seasons.
3. An increase in the accumulative capability of the soils will occur along with a sinking of the level of subterranean waters.
4. The problem of the value of the midsummer runoff in reclamation regions is difficult to solve but, if the opinion of K. Ye. Ivanov (8) is considered, a decrease in midsummer drainage value can be anticipated.

In addition to those mentioned above, the author cites the following writers: V. V. Rakhmanov (12) and B. A. Appolov (1) who introduced conclusions on the decrease of river runoff in connection with a

variation of meteorological conditions in the last decade; B. D. Zaykov (7), K. P. Voskresenskiy (6), and V. A. Troytskiy (13) who compiled charts of mean runoff moduli.

There are two figures; the first depicts the pattern of mean annual air t° at Moscow Sta. (1) and mean annual discharges (in cu/m/sec) of the Oka R. at Murom (2) according to overlapping 30-year periods from 1881-1950. Figure 2 is a detailed chart of the isolines of mean annual runoff moduli, from which it can be seen that the Meshcher territory is enclosed between isolines of the runoff modulus of 6.0 liters/sec/sq.km. on the north and 4.0 liters/sec/sq.km. on the south with a drop in mean value to 3.0 liters per sec. per sq. km. in the greatly swampy Buzhe-Pol'skiy region caused by the greater loss to evaporation occurring here. This chart is the first to present a detailed distribution of the mean annual runnoff for the Meshcher territory. The probable error in runoff calculation according to this chart amounts to ± 5 to ± 11%.

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There are two tables; Table 1 lists rivers draining the Oka, Moscow and Klyzama River basins, distances from estuaries in km., lengths in km., area of watersheds, extent of lake coverage, swamp coverage, and forest area; the table includes much numerical data. Table 2 is brief but it does present the sigma (mean quadratic error of computing total evaporation by various methods) and gives the values as follows for the 4 authors cited in 3rd paragraph of card 2/4: Polyakov- ± 7.2%; Begrov- ± 8.0%; Budyko- ± 8.5%; and Kuzmin- ± 9.5%. There are 13 references, all of which are Slavic.

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Card 6/6

LUCHSHEVA, Aleksandra Anatol'yevna; BUROVETS, Ye.P., retsenzent; CHEBOTAREV, A.I., otv.red.; IVZHENKO, A.A., red.; YASNOGORODSKAYA, M.M., red.; BRAYNINA, M.I., tekhn.red.

[Practical hydrology; exercises in hydrological calculations] Prakticheskaia gidrologiia; uprazhneniia po gidrologicheskim raschetam. Izd.2., perer. i dop. Leningrad, Gidrometeor. izd-vo, 1959. 467 p. (MIRA 13:2)
(Hydrology--Tables, calculations, etc.)

LUCHSHEVA, Aleksandra Anatol'yevna; NEGOVSKAYA, T.A., otv. red.; YASNOGORODSKAYA, M.M., red.; BRAYNINA, M.I., tekhn. red.

[Collection of problems on hydrometry] Sbornik zadach po gidrometrii. Leningrad, Gimizd., 1963. 294 p. (MIRA 16:9)

(Hydraulic measurements)

GAVICH, I.K.; LUCHSHEVA, A.A.; SEMENOVA, S.M.; KONDRAT'YEVA, V.N., red.

[Collection of problems on general hydrology] Sbornik zadach po obshchemu gidrogeologii. [n.p.] Vysshaia shkola, 1964. 261 p. (MIRA 18:4)

LUCHSHEVA, Z.F.

Isolation of tularemia microbe from patients with the ocular-bubonic form by direct seeding on amino peptide agar. Zhur. mikrobiol., epid. i immun. 40 no.9:137 S '63. (MIRA 17:5)

1. Iz Vostochno-Kazakhstanskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.

LEYBENZON, A.S.; LUCHSHEVA, Z.F.

Preliminary data on the culturing of the causative agents of tularemia, brucellosis, and plague on a medium with native fermentative hydrolysate aminopeptide-2. Report No. 1. Zhur. mikrobiol. epid. i immun. 31 no.2:102-103 D '60. (MIRA 14:6)

1. Iz Vostochno-Kazakhstanskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.

(TULAREMIA) (BRUCELLOSIS) (PLAGUE)
(BACTERIOLOGY—CULTURES AND CULTURE MEDIA) (PEPTIDES)

LEYBENZON, A.S.; LUCHSHEVA, Z.F.

Nutrient culture medium for the cultivation of tularemia microbes based on a soviet industrial hydrolysate, aminopeptide. Report No.2. Zhur.mikrobiol., epid. i immun. 32 no.11:120-126 N '61. (MIRA 14:11)

1. Iz Votochno-Kazakhstanskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.

(PASTEURELLA TULARENSIS)
(BACTERIOLOGY—CULTURES AND CULTURE MEDIA) (PEPTIDES)

LUCHT, A., dipl. inz. (Frankfurt n/Majni); TESKE, K., drzavni savjetnik n.r., inz. (Frankfurt n/Majni); BEROS, Zdravko, inz. [translator].

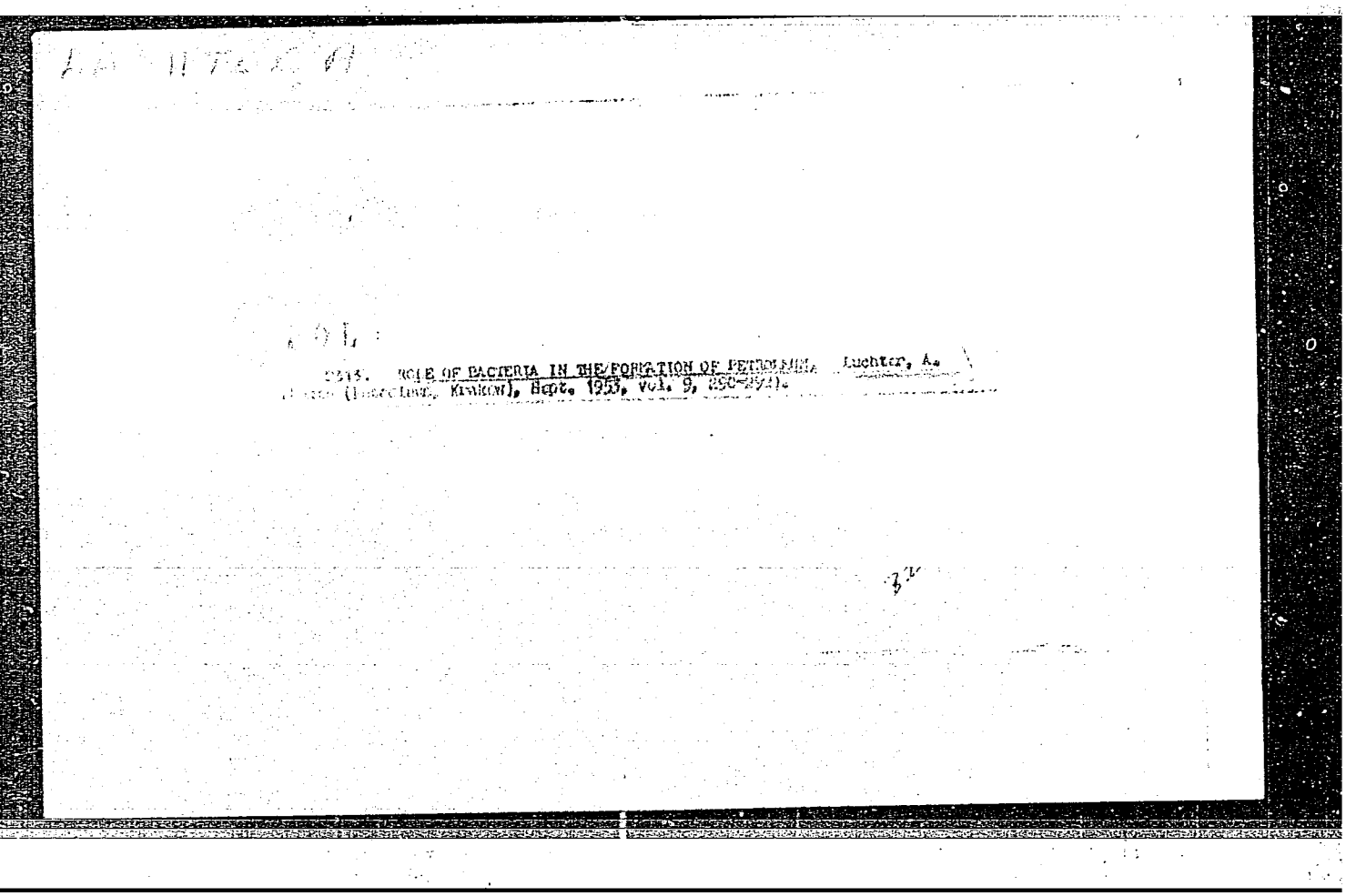
The J-grooving in preparation of welded seams in heavy plates. Zavarivanje 6 no.10:218-221 0'63.

GRICIUTE, L., med. m. kand.; LUCHTANAS, B., med. m. kand.

A case of endometriosis of a postoperative scar. Sveik. apsaug. 7 no.4(76):34-35 Ap '62.

1. Respublikinis onkologijos m. t. institutas. Direktorius - vyr. moksl. bendr. med. m. kand. A. Telycenas.

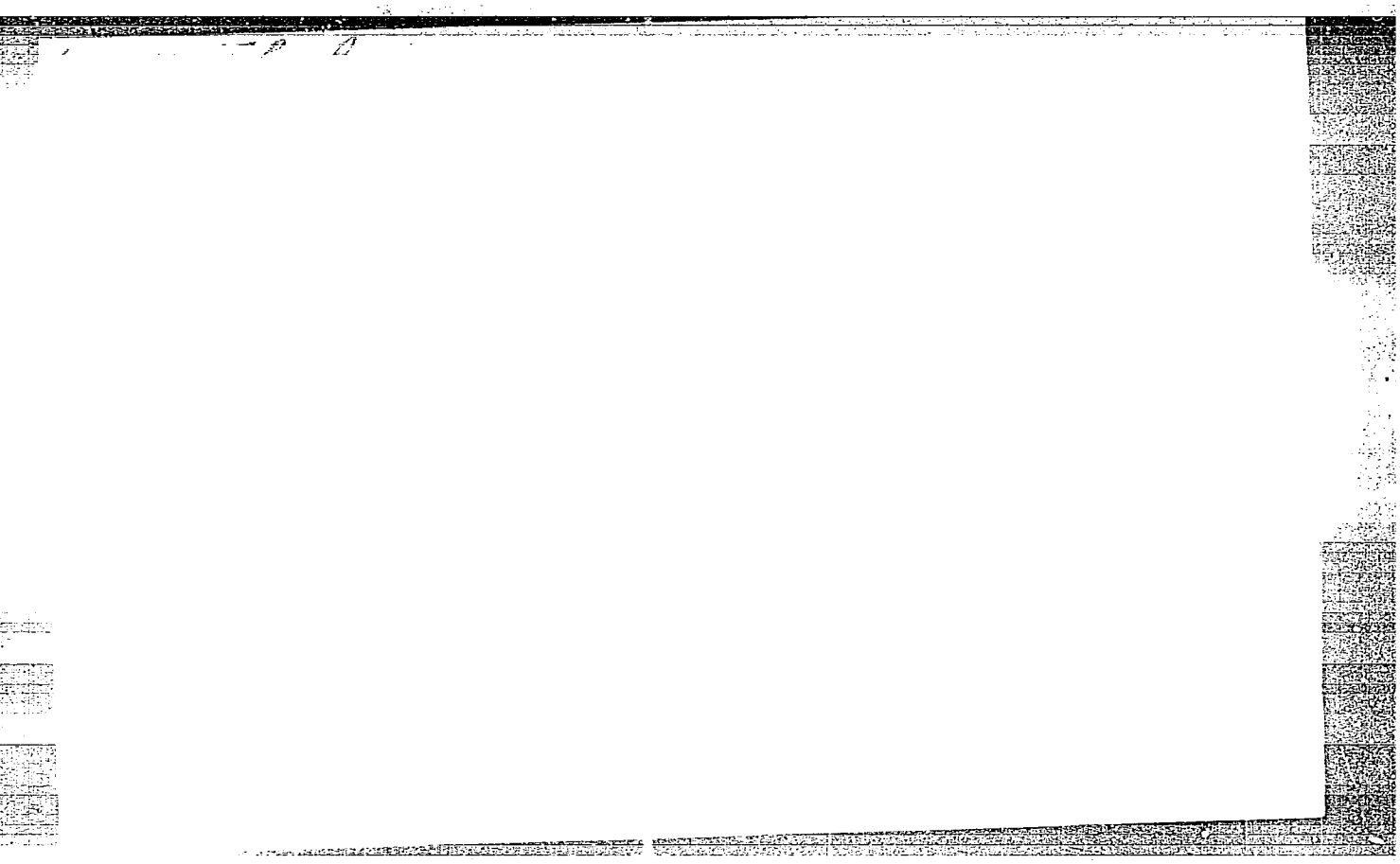
(ENDOMETRIOSIS case reports) (CICATRIX pathol)



2515. ROLE OF BACTERIA IN THE FORMATION OF PETROLEUM. Luchter, A.
(Moscow, Russia), Sept. 1953, Vol. 9, [illegible]

LUCHTER-A.

Utilization of hydrocarbons by bacteria isolated from oil fields. A. Luchter (Inst. Naftowy, Kraków). *Acta Microbiol. Polon.* 4, 271-9(1955).—The study of hydrocarbon-requiring bacteria was conducted with the purpose of finding a strain suitable for oil prospecting. Twenty-four bacterial cultures were isolated from soil in oil fields and grown on benzene, petroleum, and paraffin oil as the sole C source. Of these, 3 cultures could be grown on inorg. medium (Bokova, *et al.*, *C.A.* 44, 7517*a*) in an atm. contg. propane and butane (0.4% or 0.04 vol. %); they would not grow in presence of CO_2 only. By serial transfer these cultures were trained to better growth and shorter incubation period. The incubation period varied with temp., with 48-hr. incubation at optimum temp., 19–28°. Addn. of glucose, lactose, fructose, galactose, or mannitol shortened incubation to 24 hrs. Field expts. were conducted by placing the cultures in 3-m. holes in the ground for 20 days. Only cultures placed in oil fields grew. For best results these test cultures should be adapted to low temp. as the temp. in the drill holes is 6°. I. Z. Roberts



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